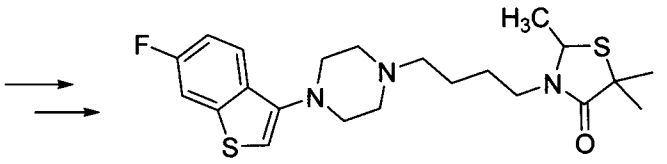

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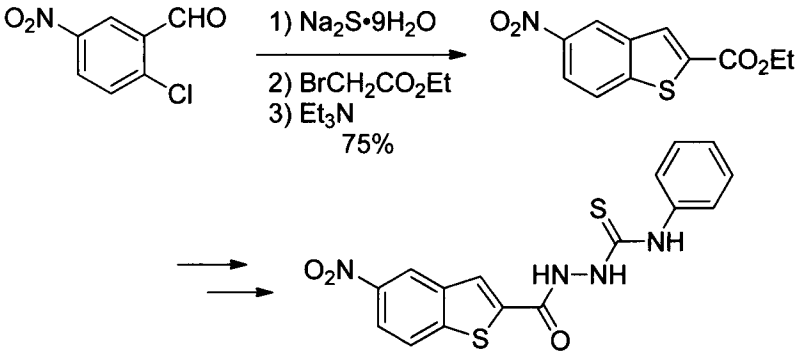
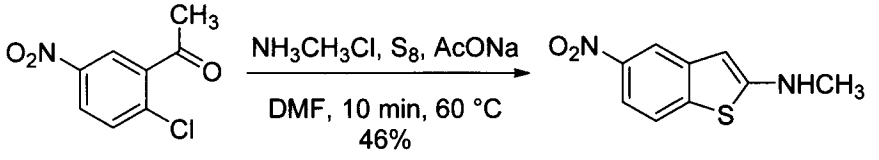
A modification of the Fiesselman synthesis was used to produce a 5-substituted benzothiophene from the corresponding benzaldehyde derivative as illustrated below.[113] This methodology was also employed in the synthesis and study of zileuton analogues as anti-inflammatory and anti-nocieptive agents.[114]



Gewald Aminobenzothiophene Synthesis

Synthesis of 2-aminobenzothiophene derivatives were achieved via a modified Gewald aminobenzothiophene synthesis under the Willgerodt–Kindler conditions.[115] This procedure produced the desired 2-aminobenzothiophenes, such as *N*-methyl-5-nitrobenzo[b]thiophen-2-amine shown below, in moderate to good yields.



Acid-Promoted Cyclization

Synthesis of benzothiophenes can also be accomplished by an acid-promoted intramolecular cyclization reaction. The 3-substituted thiophene undergoes a rearrangement under acidic conditions to produce 2-substituted benzothiophenes.[116]